

CLAIMS

- 1    1.     An RF power LDMOS transistor comprising:
  - 2       - multiple pairs of parallel gate fingers, the gate fingers of each gate finger pair being
  - 3       located on opposite sides of an associated p<sup>+</sup> sinker, and metal clamps being provided
  - 4       to short-circuit the p<sup>+</sup> sinkers and n<sup>+</sup> source regions on opposite sides of the p<sup>+</sup>
  - 5       sinkers,
  - 6       - wherein each gate finger of a gate finger pair is associated with separate metal
  - 7       clamps that short-circuit the n<sup>+</sup> source region and the p<sup>+</sup> sinker associated with that
  - 8       particular gate finger,
  - 9       - wherein the separate metal clamps associated with each gate finger pair are separated
  - 10      by a slot that extends between the parallel gate fingers,
  - 11      - a metal runner that extends in the slot between the separate metal clamps associated
  - 12      with each gate finger pair from a gate pad, and
  - 13      - wherein both gate fingers of a gate finger pair are connected to the associated metal
  - 14      runner at both their ends and at predetermined positions along their lengths.
- 1    2.     The transistor according to claim 1, wherein the metal runners are provided on
- 2       a dielectric layer on top of the p<sup>+</sup> sinkers.
- 1    3.     The transistor according to claim 1, wherein each metal clamp covers the
- 2       associated gate finger to shield it from a respective drain region.
- 1    4.     The transistor according to claim 1, further comprising a well which extends
- 2       from under the gate fingers and encloses said source regions.
- 1    5.     The transistor according to claim 4, further comprising source regions
- 2       extending lateral from each side of said well.

- 1   6.     The transistor according to claim 5, wherein the source region comprise a first
- 2   region and a second region surrounding said first region, wherein the second region is
- 3   less doped than said first region.

- 1     7.     An RF power LDMOS transistor comprising:
- 2     - a substrate,
- 3     - a first and second source region spaced apart,
- 4     - a sinker separating said first and second source region,
- 5     - a first and second drain region arranged to define in combination with said first and
- 6     second source region a first and second channel,
- 7     - a first and second gate finger covering said first and second channel, respectively,
- 8     - first and second metal clamps which short-circuit the sinker and respective source
- 9     regions on opposite sides of the sinker,
- 10    - wherein the first and second metal clamps are separated by a slot that extends
- 11    between the parallel gate fingers, and
- 12    - a metal runner that extends in the slot between the separate metal clamps.
- 1     8.     The transistor according to claim 7, wherein both gate fingers are connected to
- 2     the associated metal runner at both their ends and at predetermined positions along
- 3     their lengths.
- 1     9.     The transistor according to claim 7, wherein the metal runner is provided on a
- 2     dielectric layer on top of the sinker.
- 1     10.    The transistor according to claim 7, wherein each metal clamp covers the
- 2     associated gate finger to shield it from a respective drain region.
- 1     11.    The transistor according to claim 7, further comprising a well which extends
- 2     from under the gate fingers and encloses said source regions wherein said well defines
- 3     the channel.

- 1 12. The transistor according to claim 7, wherein each source region comprise a  
2 first region and a second region surrounding said first region, wherein the second  
3 region is less doped than said first region.